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ABSTRACT

A radio placed in each classroom was successfully used as an aid to teaching 1,800 new words to 24,000 middle grade, public school children in St. Louis. The lessons were presented three days weekly over the school system's radio station. Students were tested before and after each lesson. The pre- and re-test answer sheets were scored at the school's computer center, with printouts of the resulting data being sent to the teachers. The results of the project were that, with the single exception of the sixth grade reading scores, children achieved well above what was expected on all measures at all levels. Most gains were three to four months above expected. Changes in IQ scores were also very encouraging. The sixth grade city-wide average score on the Lorge-Thorndike IQ test was 100.1 in May 1970, the first time in many years that an entire grade level of St. Louis has equalled the national average on paper-and-pencil IQ test. The precise cause of the gains is not certain. It may be that the project simulated the environment that helps make middle-class children verbal. (MF)

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ST. LOUIS PUBLIC SCHOOLS VOCABULARY DEVELOPMENT PROJECT

Radio In Language Growth for Study and Discussion

Project Created By Dr. William Kottmeyer
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Radio Teacher- Dr. Kottmeyer

The project taught 1,800 new words to 24,000 middle grade students in ninety radio programs three times weekly from September through May, 1969-70, via a radio placed in each classroom. The result is that scores on Iowa Tests of Basic Skills and Lorge-Thorndike IQ tests show that St. Louis' fourth, fifth, and sixth graders did indeed show great improvement.

At the beginning of the program ITBS and Lorge-Thorndike tests were given in September 1969 to all St. Louis middle grade students. After that, they were taught vocabulary from September 1969 through May 1970. In May, Different forms of the same tests were given. The results show that, with the single exception of the sixth grade reading scores, children achieved well above expected on all measures at all levels. Most gains were three to four months above expected. Changes in IQ scores were also very encouraging. The sixth grade city-wide average score on the Lorge-Thorndike IQ test was 100.1 in May 1970, the first time in many years that an entire grade level of St. Louis has equalled the national average on paper-and-pencil IQ tests.

The figures below show initial scores made by children in each grade in September 1969, the scores we expected they would make in May 1970 (based on their prior learning rates), and their actual May scores on the three subtests of the ITBS. Changes in IQ are also shown.

Figures 1, 2, 3, 4

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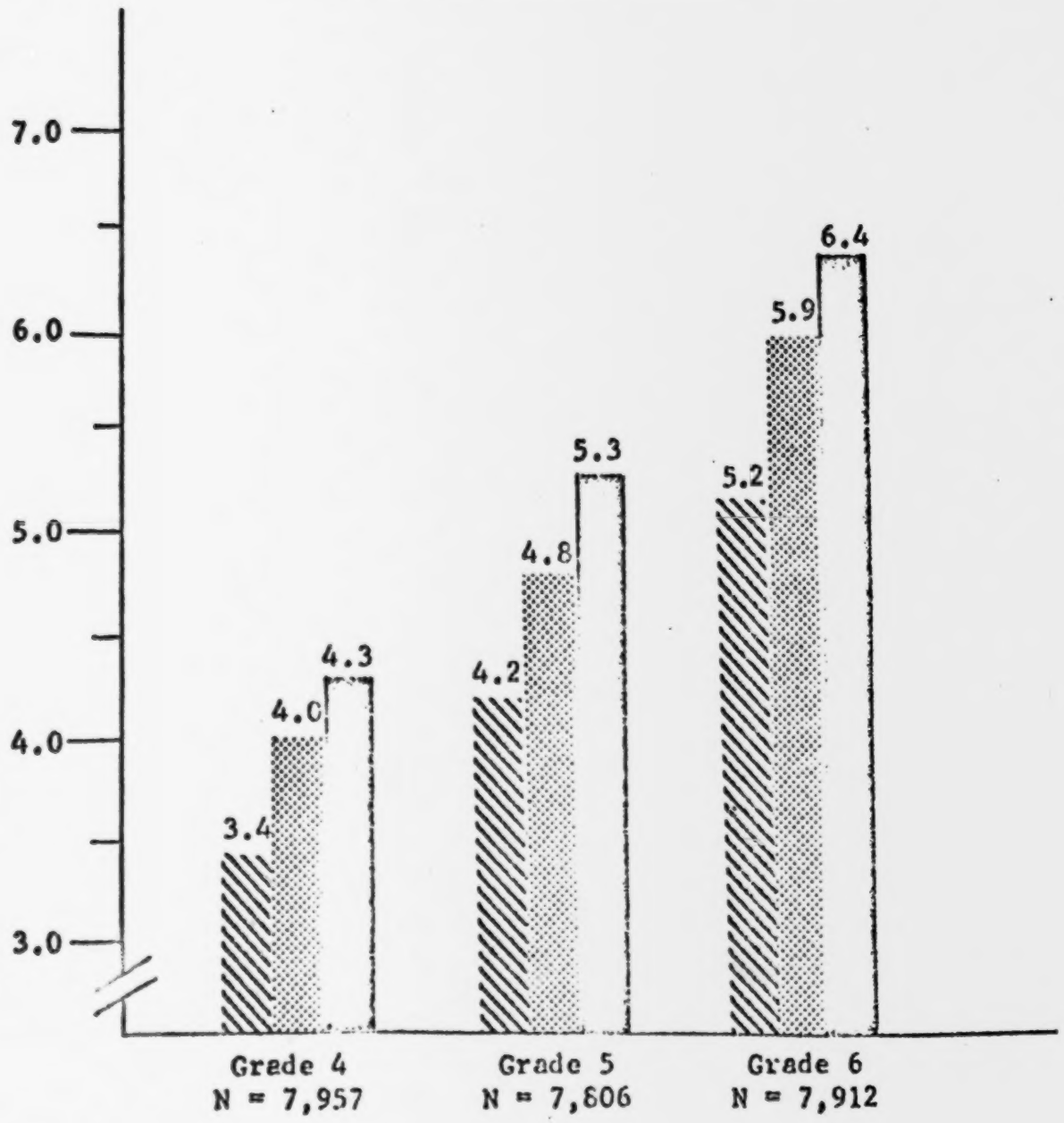
Figure 1. Comparison of Pre-Test, Expected Post-Test, and Actual Post-Test ITBS Scores:

VOCABULARY



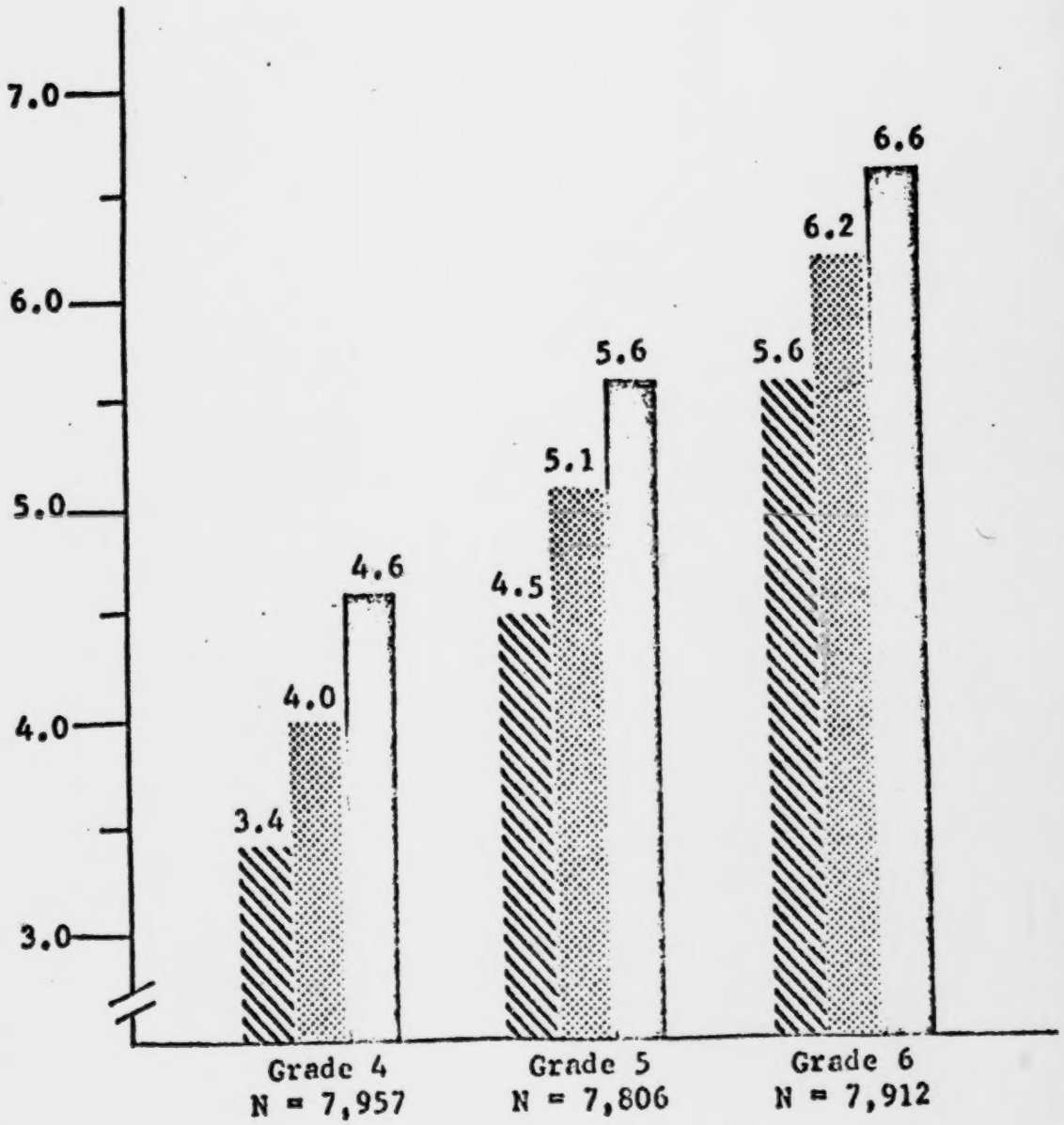
September, 1969

Expected Gain (Based on Prior Rate of Learning)

May, 1970

Figure 2. Comparison of Pre-Test, Expected Post-Test and Actual Post-Test ITBS Scores:

SPELLING



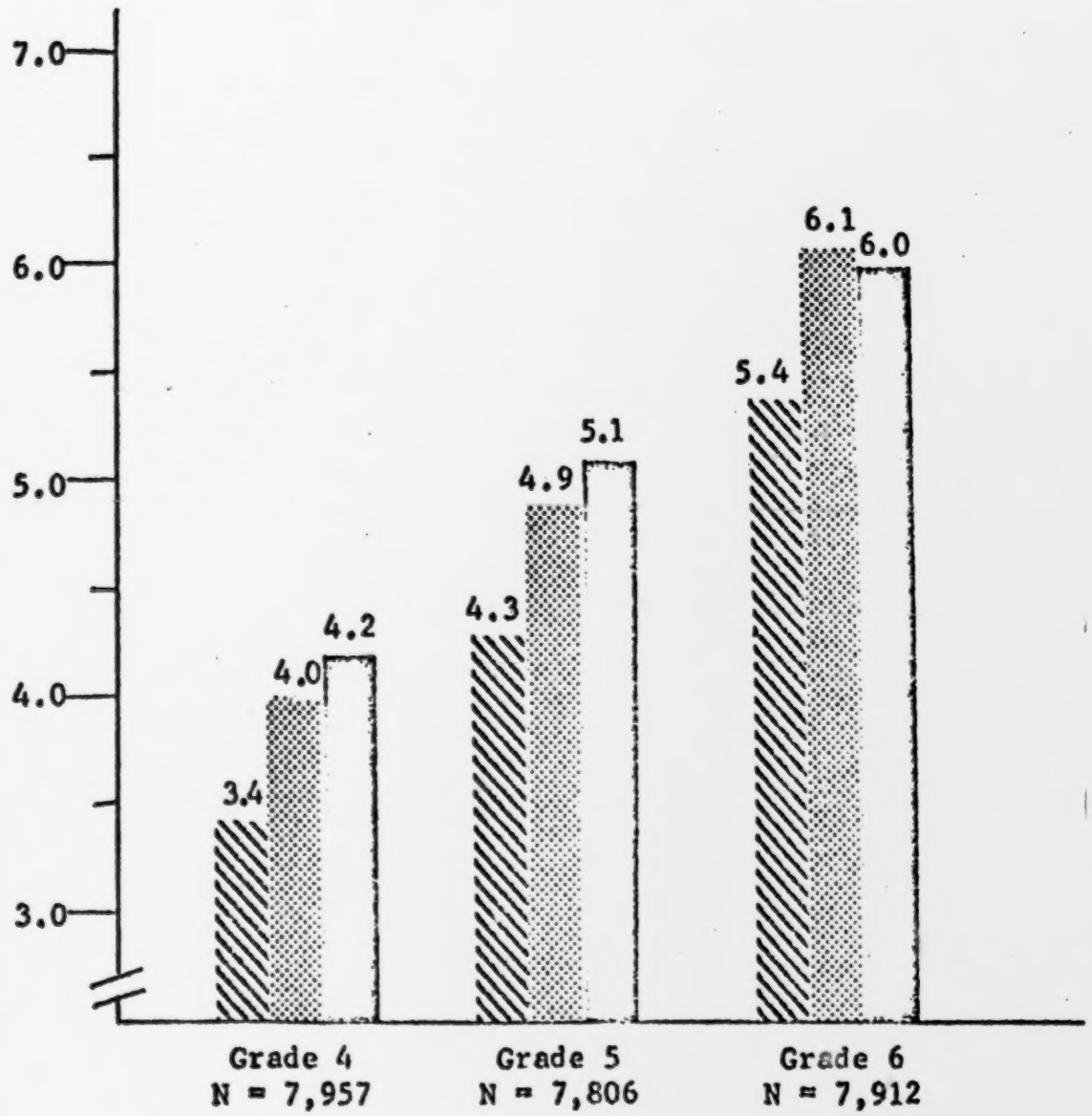
September, 1969

Expected Gain (Based on Prior Rate of Learnin

May, 1970

Figure 3. Comparison of Pre-Test, Expected Post-Test, and Actual Post-Test ITBS Scores:

READING

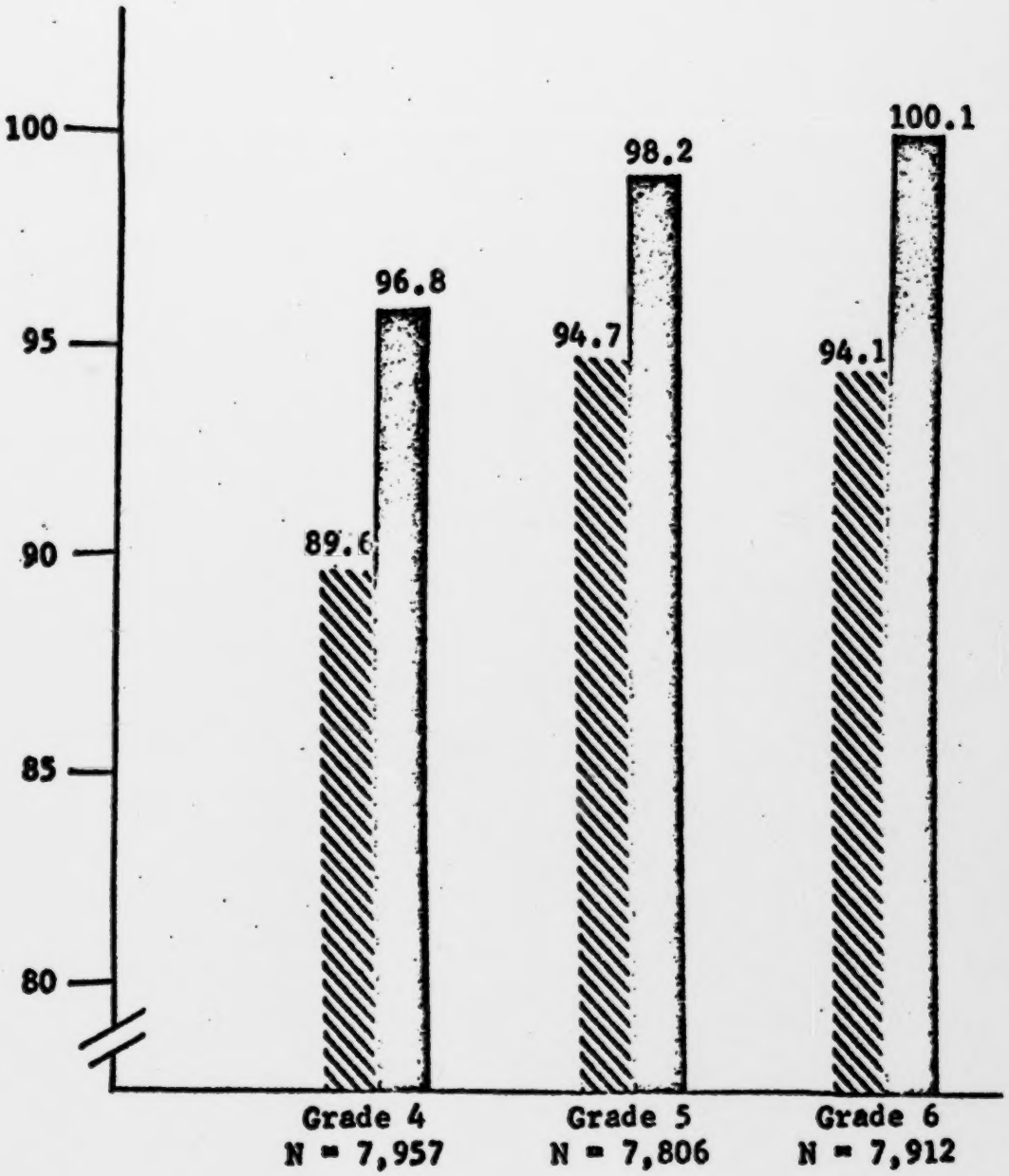


September, 1969

Expected Gain (Based on Prior Rate of Learning)

May, 1970

Figure 4. Changes in Lorge-Thorndike IQ.



September, 1969

May, 1970

Those results come at a time when programs of compensatory education are being roundly criticized for not producing measureable gains in student achievement. St. Louis' schools have all the problems associated with the growing failure of education programs in large cities. Two-thirds of the school population are black, and one-third of the children are on Aid to Dependent Children. Public support of the schools is declining. People who can afford to pay taxes continue moving to the suburbs, and poor people move into the spaces the tax-payers vacate. Despite conditions that normally predict failure of education programs, St. Louis's middle grade children are achieving at rates considerably higher than is expected in large city schools. Large numbers of poor urban children can make satisfying gains in instructional programs that are well-conceived and well-executed.

The premise of the St. Louis Vocabulary Development Project has been that success in school is determined largely by verbal ability. It would seem to follow, then, that a quick way to improve success in school would be to increase vocabulary, the key element of verbal ability.

Vocabulary seems to gain special importance beginning about the fourth grade. By the middle grades, when students leave the protection of the basal reader and get into subject matter texts, the problem of limited vocabulary begin to bear heavily on many students--especially those from backgrounds that have not rewarded

or encouraged verbal ability. Middle graders' reading books continue with narrative content and a controlled vocabulary, but the textbooks in science, health, social studies, arithmetic, etc., become increasingly expository and the vocabulary has less and less relationship to the vocabulary of the reading texts. After a time of making laborious attempts to extract vague, or partial, or confused meanings from their content textbooks, many children begin developing protective insulations of apathy or hostility. The consequences for the children and the schools are familiar.

Most teachers' attempts at improving vocabulary have not been particularly rewarding. Attempts often take the form of the once-a-week-on-Friday lists of words with no contexts; dictionary definitions that are often more difficult than the words they define; children trying to use words they do not really understand in "original" sentences they do not really care about. Students and teachers tire, and the dreary apparatus falls of its own dead weight. Other methods and structures in the hands of extraordinary teachers have, perhaps, been more successful. For the most part, though, schools have relied on parents to send them children who are already facile with words. When that has not happened--as is the case in most city schools--the school's expectations and the students' capacities cross: again, with the familiar consequences.

The St. Louis Vocabulary Development Project is a massive, concerted effort to intervene on the side of the city child.

By increasing his power with words, the project hopes to increase the child's capacity to handle the subject matter he encounters in school. The project was designed to show that measureable improvements in the learning of large numbers of city children can be made as a result of intensive, systematic vocabulary instruction.

The program has been evolving since 1967. Materials were developed and tested during 1967-68. Results from a large demonstration in 1968-69 encouraged the administration to expand the program to include all middle grade students in the project for 1969-70. In 1968-69, the project presented the same lessons to students in grades four through six. In 1969-70, fifth and sixth graders received the same instruction--thirty minute lessons three days weekly, Greek and Roman myths to give the words a context, and a total of 1,800 words for the year. That proved to be too many words for fourth graders. In 1969-70, they were given fewer words and shorter lessons, with fables and folk tales to accompany them.

The words for the lessons were selected from Thorndike and Lorge's The Teacher's Work Book of 30,000 Words (1945) which lists the words according to their frequency of use in English prose. Words which would be likely to give middle grade students some difficulty were chosen from the thousand words that are most frequently used. Those were arranged alphabetically in groups of twenty (groups of eight for the fourth grade) and simple multiple

choice vocabulary tests were devised. The same was done with the second thousand, the third, the fourth, and so on. The lists were printed as pre-tests of twenty words (eight for the fourth graders), re-tests of the same words in scrambled order, and mastery tests of a sample of 100 of the words covered in nine lessons.

The lessons were presented three days weekly over the school system's radio station. Before the radio lesson was presented, the classroom teacher gave the students a pre-test. Answers were recorded on Digitek answer sheets and the teacher collected them. The radio lesson began, and the radio teacher dictated the test words and dictionary pronunciation as the classroom teacher wrote them on the board and the students wrote them in their word notebooks.

The radio teacher provided an explanation of the meaning of each word; gave illustrations of its uses; called attention to unexpected spellings; explained the dictionary spellings and symbols; gave the noun, verb, adjective, and adverb forms when they were formed from the same root; discussed synonyms, antonyms, and homonyms.

When the words had been discussed, the radio teacher told stories that used the test words in context as the students followed along in their own books. After a number of lessons had accumulated, it became possible to incorporate, in addition to thetwenty test words for the day, between one and two hundred tests words from earlier lessons. Thus, the test words reappeared frequently in various narrative contexts including regular textbooks. Teachers were alert to reviewing the meanings as the words were encountered

in other contexts, and many of the teachers developed ingenious and effective ways of their own for reinforcing the vocabulary instruction.

When the radio lesson was over, the students took a re-test again recording answers on Digitek sheets. The answer sheets were brought to a central collection point where they were picked up weekly by regular truck delivery. The pre-and re-test answer sheets were scored by a test scanner at the school's computer center. The computer then provided data by child, by class in each school, and by overall grade level. The computer print-outs were returned to each teacher a few days after the mastery test, and the results were given to the students.

None of the individual elements of the St. Louis Vocabulary Development Project is new. Radio teaching has been around for a long time. Digitek scoring and computer tabulation are familiar applications of technology. The radio teacher's techniques are in the best style of the old school of deductive, direct teaching.

The distinction of the program comes from the combinations of the elements, and the massive, systematic, long-term barrage of new words for many children. Many words and systematic instruction over a long period of time produce a cumulative effect, that, we believe, accounts for sizeable gains in students' verbal ability as reflected in standardized achievement tests and paper-and-pencil IQ measures.

The precise cause of the gains is not certain. Perhaps the project simulates the environment that helps make middle-class children verbal. The children in the project customarily hear many big words, and they hear them frequently. The words become a part of the atmosphere for them, a part of their daily coming and going.

We do not venture that the techniques will apply to all circumstances. Still, unlike most other compensatory education programs, St. Louis' Vocabulary Development Project can show objective measures of substantial gain in the achievement of large numbers of children after one year's instruction.

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